FCMAT

FISCAL CRISIS & MANAGEMENT
ASSISTANCE TEAM

Las Virgenes Unified School District

Technology Review

March 26, 2007

Joel D. Montero
Chief Executive Officer

FCMAT
FISCAL CRISIS & MANAGEMENT ASSISTANCE TEAM
CSIS California School Information Services

March 26, 2007

Sandra Smyser, Superintendent
Las Virgenes Unified School District
4111 N. Las Virgenes Rd.
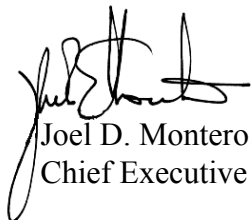Calabasas, CA 91302

Dear Superintendent Smyser:

In September 2006, the Fiscal Crisis and Management Assistance Team (FCMAT) entered into an agreement with the Las Virgenes Unified School District for a technology review. Specifically, the agreement asked FCMAT to perform the following:

1. Conduct an analysis of the different wide area network (WAN) connectivity options for the district that include franchise, wireless, and cable providers. Base the analysis on current and future needs of the district, support, infrastructure costs, and recurring cost over a specified period of time.

2. Conduct an analysis of the infrastructure and security needs of the district that will be needed based upon a high speed WAN upgrade.

3. Base analysis on current technology prevalent in K-12 schools in California. Cite school districts successfully utilizing similar technologies.

FCMAT visited the district November 21, 2006 to interview employees, review data and collect information. This report is the result of that effort.

We have appreciated the opportunity to serve you, and we extend our thanks to all the staff of the Las Virgenes Unified School District.

Sincerely,

Joel D. Montero
Chief Executive Officer

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Foreword

FCMAT Background

The Fiscal Crisis and Management Assistance Team (FCMAT) was created by legislation in accordance with Assembly Bill 1200 in 1992 as a service to assist local educational agencies in complying with fiscal accountability standards.

AB 1200 was established from a need to ensure that local educational agencies throughout California were adequately prepared to meet and sustain their financial obligations. AB 1200 is also a statewide plan for county offices of education and school districts to work together on a local level to improve fiscal procedures and accountability standards. The legislation expanded the role of the county office in monitoring school districts under certain fiscal constraints to ensure these districts could meet their financial commitments on a multiyear basis. AB 2756 provides specific responsibilities to FCMAT with regard to districts that have received emergency state loans. These include comprehensive assessments in five major operational areas and periodic reports that identify the district's progress on the improvement plans

Since 1992, FCMAT has been engaged to perform more than 600 reviews for local educational agencies, including school districts, county offices of education, charter schools and community colleges. Services range from fiscal crisis intervention to management review and assistance. FCMAT also provides professional development training. The Kern County Superintendent of Schools is the administrative agent for FCMAT. The agency is guided under the leadership of Joel D. Montero, Chief Executive Officer, with funding derived through appropriations in the state budget and a modest fee schedule for charges to requesting agencies.
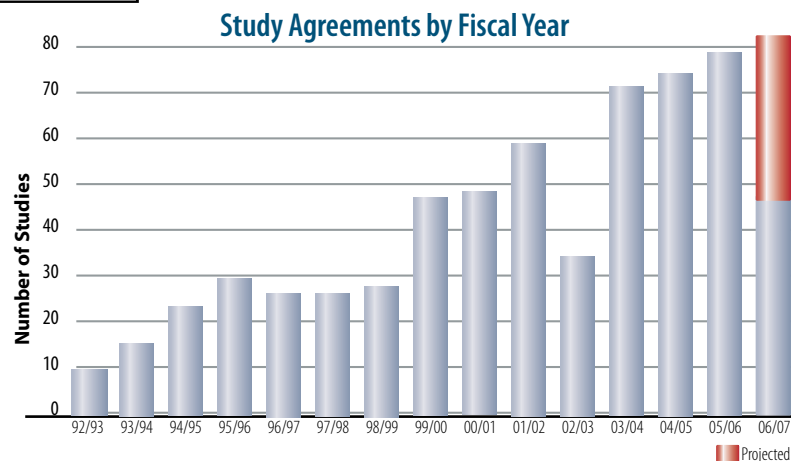
| **Total Number of Studies .... 628** |
| **Total Number of Districts in CA .... 982** |

🟢 Management Assistance.............................. 594   (94.59%)
🟡 Fiscal Crisis/Emergency 34   (5.41%)

Note: Some districts had multiple studies.
🔴 Districts (7) that have received emergency loans from the state.
(Rev. 2/7/07)

Study Agreements by Fiscal Year

Number of Studies — 92/93: 9, 93/94: 15, 94/95: 23, 95/96: 29, 96/97: 26, 97/98: 26, 98/99: 28, 99/00: 47, 00/01: 48, 01/02: 59, 02/03: 34, 03/04: 71, 04/05: 74, 05/06: 79, 06/07: 46 (Projected 82)

▮ Projected

Introduction

Background

The Las Virgenes Unified School District encompasses four cities; Calabasas, Hidden Hills, Agoura Hills, and Westlake Village; and is located within the boundaries of two county offices of education, Los Angeles and Ventura.

In September 2006, the district contacted FCMAT to request a technology review that would perform the following:

1. Conduct an analysis of the different wide-area network (WAN) connectivity options for the district that include franchise, wireless, and cable providers. Base the analysis on current and future needs of the district, support, infrastructure costs, and recurring cost over a specified period of time.

2. Conduct an analysis of the infrastructure and security needs of the district that will be needed based upon a high speed WAN upgrade.

3. Base analysis on current technology prevalent in K-12 schools in California. Cite school districts successfully utilizing similar technologies.

The purpose of this review is assist the district in preparing a request for proposal (RFP) in response to Las Virgenes Unified School District Resolution No. 16-05, commonly referred to as Measure G adopted, which was signed and approved February 28, 2006.

Study Team

The study team was composed of the following members:

Philip Scrivano
FCMAT Management Analyst
Bakersfield, CA

Leonel Martínez
FCMAT Public Information Specialist
Bakersfield, CA

Study Guidelines

FCMAT visited the district November 21, 2006 to review data, interview employees and collect information. Ongoing off-site work was conducted to compile the information requested by the district. This report is the result of that effort and is divided into the following sections:

I. Executive Summary
II. Measure G
III. Technologies

Executive Summary

The purpose of this review is to help the Las Virgenes Unified School District prepare a request for proposals (RFP). The RFP should include the following information based on the needs of the wide-area and local-area networks as well as utilization of technology in the classroom, lab, and library.

WAN – Wireless - Based on similarly sized districts in California and the topography of the district, high-speed fiber may not be an option. The estimated five-year cost for high-speed wireless is $1.12 million.

Core Network Switching - The district is looking for a tier-one vendor for all network router and layer III switching equipment. A head-end router will be located at the district office. The estimated cost is $1.2 million.

Site Wireless – RADIUS Server, Security - An enterprise-level school site wireless system based an Orinoco type technology, RADIUS authentication to Microsoft Active Directory, and support for multiple VLANS should be proposed at an estimated cost of $500,000.

Phone Systems - At a minimum, a new telephone system proposal should incorporate an enterprise-level system that incorporates a conventional, voice-over IP, or hybrid type phone solution. The estimated cost is $2 million.

Data Center / Integrated UPS, Fire Suppression and Emergency Generator - The district would like to construct a WAN data center that will serve as a central location for all WAN MDF equipment, telephone system, and servers that reside on a DMZ network, and an internal network server farm. For this purpose, the district should designate a room that meets several requirements, including the ability to have an external back-up power generator.

Administrative Servers - The proposal for this section is based on a complete replacement of the administrative/student information system hardware, domain structure, and server operating systems.

Academic Servers - Each school site should have a local Active Directory Member Server that provides several functions. These include servers and related equipment, including appropriate UPS systems that will enable a minimum of a half-hour of "up" time in the event of a power failure.

Administrative Computers - The district will establish a hardware/software replacement policy based on standards established at the beginning of each school year. All administrative computers that do not meet the minimum hardware specifications to run Apple Mac OS X or Microsoft XP Professional will be replaced.

Smart Classroom Technology - All instructional settings in the district will become "Smart" classrooms, with a small platform desktop computer station for the instructor, selected multimedia equipment to match the use of the room, and a ceiling-mounted projector.

Classroom Computers - The district will establish a hardware/software replacement policy based on standards set at the beginning of each school year. All classroom computers that do not meet the minimum hardware specifications to run Apple Mac OS X or Microsoft XP Professional will be replaced.

Middle and High School Science and Technology Labs - Each middle and high school site will designate science and technology labs as appropriate by site decision for refurbishing or creation of new labs. Each lab will have a ceiling mounted IDF fiber connected by switch to the local MDF. Each IDF cabinet will have sound proofing and fan circulation as needed for the equipment.

School Library Technology - The district will incorporate a library automation system that will create a master catalog at the district MDF. Each school site library will have a server that is used to locally check in and check out books and media materials. The system will back up to the master catalog server each night. Student accounts will be generated from the student information system. All hardware will conform to these server standards and operating systems.

Staffing – FCMAT's staffing recommendations are based on minimum positions to support the upgrades in technology described in this report. School site level technicians are essential to ensure that teachers and students can rely on this technology investment as a curriculum tool.

Findings and Recommendations

Measure G

The purpose of this review is to assist the district in preparing a request for proposals (RFP) in response to Las Virgenes Unified School District Resolution No. 16-05, commonly referred to as Measure G adopted, which was signed and approved February 28, 2006.

The district will accept a sole-source proposal for all items and services listed in this RFP and individual bids for particular technologies and services.

The Measure G documentation, measuregresolution.pdf and measuregprojectlist.pdf, can be found on the district Web site and lists five technology items in its description of technology expenditures. This document will provide further details of what the proposals should include.

Cost estimates are provided in a few critical areas. These estimates are based on similar-size districts and studies completed by the district.

The following five items were taken from the documentation:

measuregresolution.pdf

1. Provide and maintain state-of-the-art technology, data and communications equipment, upgrade Internet access and wireless technology, adapt to "smart classrooms" to improve learning, upgrade campus-wide technology, replace outdated computers, provide training, replace network infrastructure equipment; and install wiring/wireless upgrades, as necessary.

2. The District must maintain District-wide technology upgrades so that all students have access to adequate equipment and software.

3. The District must equip every local middle and high school with state-of-the-art science and technology labs.

4. Upgrade learning technology in every school library in the District.

measuregprojectlist.pdf

1. Upgrade/Replace Computer/Data/Phone Equipment. (Every 3 Years Thru 2021)

The following list of technologies will be detailed based on wide-area network needs to local-area network needs to classroom, lab, and library utilization of technology.

1. WAN Infrastructure
2. Core Network Switching
3. Site Wireless – RADIUS Server, Security
4. Phone Systems
5. Data Center / Integrated UPS, Fire Suppression and Emergency Generator
6. Administrative Servers
7. Academic Servers
8. Administrative Computers
9. Smart Classroom Technology
10. Classroom Computers
11. Middle and High School Science and Technology Labs
12. School Library Technology
13. Staffing

Technologies

WAN – Wireless

The goal for the WAN is to establish high-speed connectivity from all sites to the district office. The district will consider different technologies to accomplish this goal, including, but not limited to, local Telco fiber installations and enterprise licensed wireless systems.

In December 2006, the district contracted with Sun Wireless for a wireless study. That study will be provided by the district. Wireless proposals should adhere to the engineering of the study, but may use other makes and models of electronic equipment. The district will determine what solution will best meet district needs. If proposing a wireless solution, all equipment must use licensed frequencies.

FCMAT encourages the district to take an active role in preventing city public wireless distribution near school sites. A public wireless connection that can be accessed during the school day will not have the same Internet filtering that is appropriate for educational settings. For example, public systems will not block MySpace-type messaging and adult material that may not meet the strict criteria of pornography. The parents of students will not understand why inappropriate material was accessed at school, but on a public network.

All WAN equipment that is not located at the district office must include appropriate uninterruptible power supply (UPS) systems that will enable a minimum of one hour of "up time" in the event of a power failure.

All equipment for the WAN must have a 24-hour-a-day, 365-day-a-year maintenance and support contract that is listed in detail as a separate item.

District technology personnel should be provided with training on how to configure, administer, secure, and monitor the WAN system.

Cost Estimates

High-Speed Wireless – Based on a district wireless study for feasibility, estimated costs are as follows:

- $750,000 initial outlay
- $300 space rental per antenna located at a tower site per month. $300 X 15 X 12 = $54,000 per year
- $100,000 over five years for maintenance and replacement of equipment as needed.

    Five-year cost estimate: $1.12 million

High-Speed Fiber – Based on similarly sized districts in California and the topography of the district, high-speed fiber may not be an option. Estimated costs are as follows:

- $35,000 per 15 sites per month. $35,000 X 15 X 12 = $6,300,000 per year.
- Five-year cost estimate $31,500,000
- ERATE and other discounts could decrease this cost by 50%.

Core Network Switching

The district is looking for a tier-one vendor for all network router and layer III switching equipment. A head-end router will be located at the district office. This router will provide connectivity to the LACOE High Speed Network connection, to a demilitarized zone (DMZ) network for public applications such as the Web sites, report cards, and e-mail front-end services, and to a core router/switch for the entire district WAN. The core network router/switch will connect to all district site location main distribution frame (MDF) routers/switch, the district office LAN, and the data center network. The core router/switch must be able to connect directly to the WAN equipment without utilizing external converters or connectors. For example, if the WAN equipment terminates with a fiber connection, the equipment must accept this connection without the need for a fiber converter to wire.

Each site will have a router/switch appropriately sized for the number of nodes at the location plus 20%. This equipment must also take into account the number of IDF switches that will connect to the equipment and the type of connection available at each site. Most sites utilize a fiber solution connecting intermediate distribution frames (IDFs) to MDFs. A variety of fiber connectors are in use. Most typical connectors are SC with some ST and MJ.

Router/switch equipment must be compatible with the proposed phone system if phone systems utilize WAN/LAN equipment. In some cases, this may entail power over Ethernet or specific protocols to run on the equipment.

All head-end and MDF switch/router equipment must have a 24-hour-a-day, 365-day-a-year maintenance and support contract that is listed in detail as a separate item.

Local area network IDF switch equipment must be a minimum of layer III and be able to support all traffic and VLAN functions of the head end and MDF router/switch equipment.

DHCP services must be configured and relay out from the district office MDF router/switch system to all local area networks. If connectivity to the WAN is interrupted, local site router/switch systems will take over and deliver DHCP services.

Switch equipment must be appropriately sized for the number of nodes terminating at each IDF location plus 20%. Stackable switches may be used. If stackable switches are utilized it is preferred that the switches utilize a backbone/backplane type of connectivity.

Switch equipment must be compatible with the proposed phone system if phone systems utilize LAN equipment. In some cases, this may entail power over Ethernet or specific protocols to run on the equipment.

All IDF equipment that is not located at the district office must include appropriate UPS systems that will enable a minimum of one hour up time in the event of power failure.

All IDF equipment must have an 8 a.m. to 5 p.m., 365-day-a-year maintenance and support contract that is listed in detail as a separate item.

District technology personnel should be provided with training on how to configure, administer, and monitor the router/switch system.

Cost Estimate:

> FCMAT asked Extreme Networks to provide a quote on a system based on these recommendations.

> **$1.2 million**

Site Wireless – RADIUS Server, Security

An enterprise-level school site wireless system based on Orinoco type technology, RADIUS authentication to Microsoft Active Directory, and support for multiple VLANS should be proposed that includes a minimum of the following:

1. School site specific installation, networking, and coverage plans.

2. Security features both native to the unit and physical for prevention of theft of the access points.

3. RADIUS server hardware, software, and integration with MS Active Directory.

4. Integration with the VLAN structure proposed with router/switch hardware.

5. Training for district technology personnel on how to configure, administer, and monitor the LAN wireless activity.

Cost Estimate

$500,000

Phone Systems

The district would like to replace its aging telephone system. At a minimum, a new system proposal should incorporate an enterprise-level system that incorporates a conventional, voice-over IP, or hybrid type phone solution. The system should have at a minimum the following features:

1. Four-digit dialing between all users in the district.

2. A centralized voice mail system.

3. A Web interface management system.

4. Caller ID and 911 local ID information.

5. A combination of phone sets ranging from basic classroom units to digital multiline front office units.

6. Classroom units that need to have the ability to turn off ring tones during classroom instruction except for emergency-call situations. These units need to incorporate a flashing LED-type light that indicates a call is coming in or that the user has voice mail waiting.

7. All phone equipment that is not located at the district office must include appropriate UPS systems that will enable a minimum of one hour of "up" time in the event of power failure.

8. For all equipment for the phone system excluding phone sets must have a 24-hour-a-day, 365-day-a-year maintenance and support contract that is listed in detail as a separate item.

9. District technology personnel should be provided with training on how to configure, administer, and monitor the phone system.

Cost Estimate

$2 million

Data Center / Integrated UPS, Fire Suppression and Emergency Generator

The district would like to construct a WAN data center that will serve as a central location for all WAN MDF equipment, telephone system, and servers that reside on a DMZ network, and an internal network server farm. The district will designate a room for this purpose. Additional requirements are as follows:

1. The design should incorporate rack storage for all equipment complete with wire management.

2. Environmental factors such as air conditioning, fire suppression, and earthquake bracing should be incorporated into the design and equipment proposal.

3. The room should incorporate an environmental IP-based security and environmental monitoring system that is customizable and scalable.

4. The room should incorporate an IP-based remote KVM device.

5. A single UPS should be included to power the room for a minimum of one hour in the even of a power failure.

6. An external back-up power generator should be included to power the UPS system in the event of a prolonged power outage. The generator should be minimally configured to power essential phone and WAN equipment only.

Administrative Servers

Each school and the district office currently have a Microsoft Windows NT 4.0 server that runs on its own domain. The servers act as the primary domain controller (PDC) for their domain, and also run the Aeries student information system.

The server hardware at the schools was installed in 1999 or earlier and has not been upgraded. The hardware likely will not support an upgrade to the latest version of the Microsoft server operating system. The Microsoft Windows NT 4.0 network operating system was current in the 1990s, but has been updated several times to newer versions. Microsoft will discontinue supporting the NT 4.0 in the near future.

The current deployment of the Aeries Student Information System is more than six years old. The current build of the Aeries Student Information System has several benefits for the district. The greatest benefit is that training won't be necessary, and there will be a short learning curve for the instructional and administrative staff if the district remains on Aeries and completes an upgrade to the current product. Other benefits include more instruction time based on online attendance posting by teachers, a standard electronic grading system easily viewed by parents, and full CSIS, California School Information Services, compatibility for state reporting. The Technology Department staff also will be able to centrally manage all aspects of the system.

The Aeries company can provide the district with a complete scope of work and associated cost estimate for necessary upgrades.

The district has standardized on Compaq/HP servers. The proposal for this section is based on a complete replacement of the administrative/student information system hardware, domain structure, and server operating systems. The design should incorporate the following:

1. The student information system and other related services should be based on Blade-type servers and a storage-area network (SAN) design. All hardware must be based on a tier-one vendor, preferably Compaq/HP. Other proposals will be considered.

2. A new Microsoft Active Directory implementation needs to be designed incorporating a unified parent/child (organizational units) structure that reaches all school sites and other networks belonging to the district. The configuration should take into account a VLAN structure that separates users into three groups, administrative users, teachers and students, and guest wireless users.

3. Within the directory structure, the following basic network services should be designed into the proposal:

   • Files in all network drives are backed up by the district office nightly. Each week, the district rotates file media, and a secure set of backups is made and maintained off site. At a minimum, a local bank safety deposit box is utilized for this purpose. File media is not taken home by individual staff members.

   • There is a common drive letter mapping for all shared drives in the district. For example, a G drive for a personal log-on folder, a T drive for teachers, an S drive for subject level, and so on as needed.

   • Each user has a personal drive matching his or her log-on account.

   • Each school site has a networking group consisting of the certificated staff. In this group, all teachers and the site administrator share a common drive for file sharing. Grade-level teachers share a common drive.

   • Subject-level drives are shared throughout the district.

   • Each school site has a networking group consisting of the site administrator and designated site classified staff members. In this group, site administration and designated classified staff share a common drive for file sharing.

- The school district has a networking group for all district administration. In this group all administrators share a common drive.

- Networking groups are established for the district office that share confidential information among staff members, for example, personnel services and special education.

- A networking group is established for all district office personnel. This group would share a common drive.

- The district staff would develop a similar drive mapping plan for students based on grade level and curricular needs.

- There is a common log-on procedure, and passwords are required to be complex. Student accounts have a site and year of graduation designation so that accounts can be moved up each year and purged after graduation. Student accounts are generated using information from the student information system.

- When applicable, network resources such as printers, scanners, and copy machines are made available to users based on user permissions.

4. Appropriate server hardware and software licensing should be incorporated into this design to accommodate the basic network resources previously listed.

5. All server and related equipment that is not located at the district office must include appropriate UPS systems that will enable a minimum of a half-hour of "up" time in the event of a power failure.

6. All equipment for the servers must have an 8 a.m. to 5 p.m., 365-day-a-year maintenance and support contract that is listed in detail as a separate item.

7. District technology personnel should be provided with training on how to configure, administer, and monitor the Active Directory system.

Academic Servers

Each school site should have a local Active Directory Member Server that provides the following functions:

1. All hardware must be based on a tier-one vendor, preferably Compaq/HP. Other proposals will be considered.

2. School sites that utilize a preponderance of Apple Mac computers may elect to have an Apple Mac OS X Server installed.

3. Local print services should be provided for the school site.

4. File storage space should be provided for academic local purposes such as student portfolios and student developed multimedia. A separate disc storage unit that is easily expandable should also be provided.

5. Local academic software applications services should be provided.

6. All server and related equipment must include appropriate UPS systems that will enable a minimum of a half-hour of "up" time in the event of a power failure.

7. All equipment for the servers must have an 8 a.m. to 5 p.m., 365-day-a-year maintenance and support contract that is listed in detail as a separate item.

Administrative Computers

Administrative computers are defined as all computers that are not used for classroom purposes. This includes all computer workstations at the district office and Facilities Department as well as those used by the school front office administration and library clerks. Computers in the libraries designated for student use do not fall under this category.

The district will establish a hardware/software replacement policy based on standards established at the beginning of each school year. For the immediate purpose of this proposal, all administrative computers that do not meet the minimum hardware specifications to run Apple Mac OS X or Microsoft XP Professional will be replaced. The district will provide minimum specifications and projections for computer purchases over the next three years. Once an initial upgrade to each administrative computer is completed, a hardware compatibility list will be provided that will indicate when computers meeting the minimum requirements will be replaced.

Smart Classroom Technology

All instructional settings in the district will become "Smart" classrooms, with a small platform desktop computer station for the instructor, selected multimedia equipment to match the use of the room, and a ceiling-mounted projector. A teacher laptop program currently provides an Apple I Book and a projector to teachers participating in technology training. This section expands on this project by providing ceiling mounts and wiring for projectors, and projectors in instructional settings such as labs, libraries, and multipurpose rooms.

In addition, teachers can elect to have a SMART Board Interactive Whiteboard. The board is connected to a computer's USB port, which allows the board to interact with the computer. The computer is connected to the ceiling mounted projector, and a live and interactive image of the computer is displayed.

Classroom Computers

The district currently has a 60/40 percent split between Apple and Intel based computers in classrooms. The district will establish a hardware/software replacement policy based on standards set at the beginning of each school year. For the immediate purpose of this proposal, all classroom computers that do not meet the minimum hardware specifications to run Apple Mac OS X or Microsoft XP Professional will be replaced. The district standard for all classrooms will be a minimum of two student computers connected to the LAN. The district will provide minimum specifications and projections for computer purchases over the next three years. Once an initial upgrade to each classroom is completed, a hardware compatibility list will be provided that will indicate when computers that now meet the minimum requirements will be replaced.

Classroom computers that do not meet these specifications will not be connected to the LAN. This will enable the Active Directory development to proceed without designing backward compatibility for older systems.

Each computer purchased must at a minimum have a three-year hardware warranty, be purchased from a tier-one vendor, and be based on a multimedia business class solution.

Middle and High School Science and Technology Labs

Each middle and high school site will designate science and technology labs as appropriate by site decision for refurbishing or creation of new labs. Each lab will have a ceiling mounted IDF fiber connected by switch to the local MDF. Each IDF cabinet will have sound proofing and fan circulation as needed for the equipment. Each room will have a minimum of 35 Ethernet drops to appropriate furniture.

In addition, each lab will be a Smart classroom with the addition of subject-specific technology decided on at the site level. This technology may take the form of computers or science-specific technology such as electronic scopes, probes, and other devices.

Each lab will be equipped with classroom sound-field systems, which are basically public address systems with the inclusion of a wireless microphone. As the teacher talks into the microphone, his/her voice is transmitted to a specialized receiver/amplifier that is connected to, or physically a component of, a loudspeaker assembly. The loudspeakers may be located in the ceiling, on the walls around the room, or at the room corners.

Computers that are used in lab settings should be based on a small form factor or terminal services device such as a thin client running in a Citrix type environment.

School Library Technology

The district will incorporate a library automation system that will create a master catalog at the district MDF. Each school site library will have a server that is used to locally check in and check out books and media materials. The system will back up to the master catalog server each night. Student accounts will be generated from the student information system. All hardware will conform to above server standards and operating systems. At a minimum the system will have the following:

1. Bar code or other reader type device for each library resource available in the system. Materials purchased from vendors recognize the software vendor and are able to provide electronic updates to the catalog system.

2. The ability for students to search for books based on topic, grade level, and other catalogs in the district.

3. The ability for students and parents to access the system from the Internet in order to check availability and put books and materials on hold.

4. The incorporation of textbook management into the system.

5. A hosting of subscription services that enable database research and integration with state and federal standards for alignment with achievement standards.

Each library will be a "Smart" library with the addition of a minimum of four student computers specifically for access to subscription databases that are thoughtfully chosen by media specialists and Internet research. Student computer hardware will be based on classroom student computer standards.

Staffing

The following staffing recommendations are based on minimum positions to support the upgrades in technology proposed in this report. School site level technicians are essential to ensure that teachers and students can rely on this investment as a curriculum tool.

1. One school site technician would be responsible for (ST) for each 1,000 computers. If one school has 200 computers, another has 500, and a third has 300, these schools would share one technician. If funds are available, this ratio should be decreased to one technician for 600 computers. Technician positions ideally should be used as training positions for district technology staff opportunities.

2. The district has an estimated 5,000 computers. Using the previous recommendations of one ST per 1000 computers, a minimum of five ST positions would be divided among the school sites. In terms of computer concentration and use in the curriculum, the technician distribution would be one ST at each

of the two high schools, one ST for the three junior high school sites, and two ST positions covering the eight elementary sites. The continuation site would be assigned to an ST who may have a lighter computer load or is in close proximity to the site.

3. In terms of computer concentration and use in curriculum the technician distribution would be one ST at each of the two high schools, 1.5 ST for the three junior high school sites, four ST positions covering the eight elementary sites, and .5 ST servicing the continuation school and the district office. Using a formula of one ST positions per 600 computers, the district would employ eight ST positions. The distribution would benefit the entire district with a better distribution of ST position to assist all teachers and district staff.

4. One district network engineer would be responsible for all LAN/WAN and server hardware. Any connection issue is the responsibility of this individual. This will include all network switching, the district firewall, content, and spam filtering.

5. One district system engineer would be responsible for the LAN/WAN Active Directory deployment, student information system including CSIS reporting, and other associated software systems such as the library system. The two engineers ideally would cross train and back each other up.

6. There would be two A-Plus certified Technician II positions. One of these individuals should be Apple certified, and the other should take the lead on desktop/laptop repair and warranty services. These individuals would be responsible for all technology inventories and keeping track of equipment that no longer meets the district's minimum standards set by the technology director.

7. One Support Secretary would manage and coordinate help desk requests and software licensing. This person would report directly to the director of technology.

8. One Director of Technology would manage all technology services. All purchases of more than $500 must have his/her approval before the business office creates purchase orders. This person would oversee the technology funding and make annual reports to the school board. This person should be available to be summoned to cabinet sessions when technology questions arise.

9. The Director of Technology should work closely with the Curriculum Department in all aspects of providing services to school sites. The Director of Technology should work closely with the person managing student testing and assessment.

Appendix

A. Study Agreement

FISCAL CRISIS & MANAGEMENT ASSISTANCE TEAM
STUDY AGREEMENT
September 14, 2006

The FISCAL CRISIS AND MANAGEMENT ASSISTANCE TEAM (FCMAT), hereinafter referred to as the Team, and the Las Virgenes Unified School District, hereinafter referred to as the District, mutually agree as follows:

1. ## BASIS OF AGREEMENT

    The Team provides a variety of services to school districts and county offices of education upon request. The District has requested that the Team provide for the assignment of professionals to study specific aspects of the Las Virgenes School District operations. These professionals may include staff of the Team, County Offices of Education, the California State Department of Education, school districts, or private contractors. All work shall be performed in accordance with the terms and conditions of this Agreement.

2. ## SCOPE OF THE WORK

    A. ### Scope and Objectives of the Study

        The scope and objectives of this study are to:

        1) Conduct an analysis of the different Wide Area Network (WAN) connectivity options for the district that include franchise, wireless, and cable providers. Base the analysis on current and future needs of the district, support, infrastructure costs, and recurring cost over a specified period of time.

        2) Conduct an analysis of the infrastructure and security needs of the district that will be needed based upon a high speed WAN upgrade.

        3) Base analysis on current technology prevalent in K-12 schools in California. Cite school districts successfully utilizing similar technologies.

    B. ### Services and Products to be Provided

        1) Orientation Meeting - The Team will conduct an orientation session at the District to brief District management and supervisory personnel on the procedures of the Team and on the purpose and schedule of the study.

        2) On-site Review - The Team will meet with outside vendors in order to review proposals for wide area network development.

        3) Draft Reports - Sufficient copies of a preliminary draft report will be delivered to the District administration for review and comment.

4)   Final Report - Sufficient copies of the final study report will be delivered to the District following completion of the review.

3.   PROJECT PERSONNEL

The study team will be supervised by Anthony Bridges, Deputy Executive Officer, Fiscal Crisis and Management Assistance Team, Kern County Superintendent of Schools Office. The study team may also include:

A.   Philip Scrivano, FCMAT Management Analyst

Other equally qualified consultants will be substituted in the event one of the above noted individuals is unable to participate in the study.

4.   PROJECT COSTS

The cost for studies requested pursuant to E.C. 42127.8(d)(1) shall be:

A. $500.00 per day for each Team Member while on site, conducting fieldwork at other locations, preparing and presenting reports, or participating in meetings.

B. All out-of-pocket expenses, including travel, meals, lodging, etc. Based on the elements noted in section 2 A, the total cost of the study is not to exceed $10,000. The District will be invoiced at actual costs, with 50% of the estimated cost due following the completion of the on-site review and the remaining amount due upon acceptance of the final report by the District

C. Any change to the scope will affect the estimate of total cost.

Payments for FCMAT services are payable to Kern County Superintendent of Schools-Administrative Agent.

5.   RESPONSIBILITIES OF THE DISTRICT

A.   The District will provide office and conference room space while on-site reviews are in progress.

B.   The District will provide the following (if requested):

1)   A map of the local area
2)   Completion of a wireless survey conducted by an outside vendor, under the oversight of FCMAT

C.   The District Administration will review a preliminary draft copy of the study. Any comments regarding the accuracy of the data presented in the report or the practicability of the recommendations will be reviewed with the Team prior to completion of the final report.

Pursuant to EC 45125.1(c), representatives of FCMAT will have limited contact with

District pupils. The District shall take appropriate steps to comply with EC 45125.1(c).

6.   PROJECT SCHEDULE

The following schedule outlines the planned completion dates for key study milestones:

Orientation:	September 1, 2006
FCMAT Staff Activities:	Beginning the week of October 2, 2006
Preliminary Report Submitted:	Estimated December 1, 2006
Final Report Submitted:	To be determined
Board Presentation:	To be determined

7.   CONTACT PERSON

Please print name of contact person: Donald Zimring, Deputy
Superintendent

Telephone____818-878-5200_____ FAX ____818-880-4200_____

Internet Address__zimring@lvusd.org_____

_____   10-6-06_____
Sandra Smyser, Superintendent   Date
Las Virgenes Unified School District

_____   9-15-06_____
Barbara Dean, Deputy Administrative Officer   Date
Fiscal Crisis and Management Assistance Team

In keeping with the provisions of AB1200, the County Superintendent will be notified of this agreement between the District and FCMAT and will receive a copy of the final report.